AMENDMENTS TO THE CLAIMS

IN THE CLAIMS

1. (Original) A semiconductor memory device comprising:

a nonvolatile memory section; and

a volatile memory section, wherein

the nonvolatile memory section includes a nonvolatile memory cell having a gate electrode formed on a semiconductor layer via a gate insulating film, a channel region disposed under the gate electrode, diffusion regions disposed on both sides of the channel region and having a conductive type opposite to that of the channel region, and memory functional units formed on both sides of the gate electrode and having a function for retaining charges.

2. (Original) The semiconductor memory device according to claim 1, wherein the volatile memory section includes an SRAM.

3. (Original) The semiconductor memory device according to claim 2, wherein the nonvolatile memory cell and the SRAM are formed on a single chip.

4. (Original) The semiconductor memory device according to claim 1, wherein the volatile memory section includes a DRAM.

5. (Original) The semiconductor memory device according to claim 4, wherein

the volatile memory section includes refreshing operation means for refreshing the DRAM.

6. (Original) The semiconductor memory device according to claim 1, further comprising:

a first chip forming the nonvolatile memory section;

a second chip forming the volatile memory section; and

a single package containing therein the first chip and the second chip.

7. (Original) The semiconductor memory device according to claim 1, wherein at least a part of the memory functional units overlaps with a part of the diffusion region.

8. (Original) The semiconductor memory device according to claim 1, wherein the memory functional units include a retaining film having a function for retaining charges, and a surface of the retaining film is arranged almost in parallel to a surface of the gate insulating film.

9. (Original) The semiconductor memory device according to claim 8, wherein the film having the function of retaining charges is arranged almost in parallel to a side surface of the gate electrode.

10. (Original) The semiconductor memory device according to claim 1, wherein the memory functional units include a retaining film having a function for retaining charges and an insulating film for separating the retaining film from one of the channel region and the semiconductor layer, the insulating film having a thickness smaller than that of the gate insulating film and not smaller than 0.8 nm.

11. (Original) The semiconductor memory device according to claim 1, wherein the memory functional unit includes a retaining film having a function for retaining charges and an insulating film for separating the retaining film from one of the channel region and the semiconductor layer, the insulating film having a thickness greater than that of the gate insulating film and not greater than 20 nm.

12. (Currently Amended) A semiconductor device comprising:

~~the semiconductor memory device according to claim 1; and~~

a semiconductor memory device that comprises:

a nonvolatile memory section;

a volatile memory section, wherein

the nonvolatile memory section includes a nonvolatile memory cell having a gate electrode formed on a semiconductor layer via a gate insulating film, a channel region disposed under the gate electrode, a diffusion regions disposed on both sides of the channel region and having a conductive type opposite to that of the channel region, and memory functional units formed on both sides of the gate electrode and having a function for retaining charges; and

a logical operation section for performing operation processing on the basis of information stored in the semiconductor memory device.

13. (Currently Amended) A portable electronic apparatus comprising ~~the~~ a semiconductor memory device ~~according to any one of claims 1 to 11.~~ comprising:

a nonvolatile memory section; and

a volatile memory section, wherein

the nonvolatile memory section includes a nonvolatile memory cell having a gate electrode formed on a semiconductor layer via a gate insulating film, a channel region disposed under the gate electrode, diffusion regions disposed on both sides of the channel region and having a conductive type opposite to that of the channel region, and memory functional units formed on both sides of the gate electrode and having a function for retaining charges.

14. (Currently Amended) A portable electronic apparatus comprising ~~the~~ a semiconductor memory device ~~according to claim 12.~~ comprising:

a nonvolatile memory section;

a volatile memory section, wherein

the nonvolatile memory section includes a nonvolatile memory cell having a gate electrode formed on a semiconductor layer via a gate insulating film, a channel region disposed under the gate electrode, a diffusion regions disposed on both sides of the channel region and having a conductive type opposite to that of the channel region, and

memory functional units formed on both sides of the gate electrode and having a function for retaining charges; and

a logical operation section for performing operation processing on the basis of information stored in the semiconductor memory device.

15. (New) The portable electronic apparatus according to claim 13, wherein the volatile memory section includes an SRAM.

16. (New) The portable electronic apparatus according to claim 15, wherein the nonvolatile memory cell and the SRAM are formed on a single chip.

17. (New) The portable electronic apparatus according to claim 13, wherein the volatile memory section includes a DRAM.

18. (New) The portable electronic apparatus according to claim 17, wherein the volatile memory section includes refreshing operation means for refreshing the DRAM.

19. (New) The portable electronic apparatus according to claim 13, further comprising:

a first chip forming the nonvolatile memory section;

a second chip forming the volatile memory section; and

a single package containing therein the first chip and the second chip.

20. (New) The portable electronic apparatus according to claim 13, wherein at least a part of the memory functional units overlaps with a part of the diffusion region.

21. (New) The portable electronic apparatus according to claim 13, wherein the memory functional units include a retaining film having a function for retaining charges, and a surface of the retaining film is arranged almost in parallel to a surface of the gate insulating film.

22. (New) The portable electronic apparatus according to claim 21, wherein the film having the function of retaining charges is arranged almost in parallel to a side surface of the gate electrode.

23. (New) The portable electronic apparatus according to claim 13, wherein the memory functional units include a retaining film having a function for retaining charges and an insulating film for separating the retaining film from one of the channel region and the semiconductor layer, the insulating film having a thickness smaller than that of the gate insulating film and not smaller than 0.8 nm.

24. (New) The portable electronic apparatus according to claim 13, wherein the memory functional unit includes a retaining film having a function for retaining charges and an insulating film for separating the retaining film from one of the channel

region and the semiconductor layer, the insulating film having a thickness greater than that of the gate insulating film and not greater than 20 nm.